

Substitute for forms 1449A/PTO &amp; 1449B/PTO

**FIRST INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

ATTORNEY'S DKT NO.  
028726-033

APPLICATION NO.  
10/076,838

APPLICANT  
Majumdar et al.

FILING DATE  
February 13, 2002

GROUP  
1641

## U.S. PATENT DOCUMENTS

Examiner Initials	Document Number	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)
J	4,236,893	Rice	12/1980
	4,242,096	Oliveira et al.	12/1980
	4,487,839	Kamentsky	12/1984
	4,537,861	Elings et al.	08/1985
	4,596,697	Ballato	06/1986
	4,637,987	Minten et al.	01/1987
	4,651,074	Wuse	03/1987
	4,735,906	Bastiaans et al.	04/1988
	4,847,193	Richards et al.	07/1989
	4,867,946	Gross et al.	09/1989
	4,906,840	Zdeblick et al.	03/1990
	4,909,990	Block et al.	03/1990
	4,931,384	Layton et al.	06/1990
	4,999,284	Ward et al.	03/1991
	5,001,053	Takahashi et al.	03/1991
	RE 33,581	Nicoli et al.	04/1991
	5,025,658	Elings et al.	06/1991
	5,055,265	Finlan	10/1991
	5,118,608	Layton et al.	06/1992
	5,130,257	Baer et al.	07/1992
	5,135,852	Ebersole et al.	08/1992
	5,144,833	Amer et al.	09/1992
	5,156,810	Ribi	10/1992
	5,156,972	Issachar	10/1992
	5,172,472	Lindner et al.	12/1992
	5,179,028	Vali et al.	01/1993
	5,283,037	Baer et al.	02/1994
	5,306,644	Myerholtz et al.	04/1994
	5,323,636	McGowan et al.	06/1994
	5,350,697	Swope et al.	09/1994
	5,352,582	Lichtenwalter et al.	10/1994
	5,372,930	Colton et al.	12/1994
	5,374,563	Maule	12/1994
	5,411,709	Furuki et al.	05/1995
	5,427,915	Ribi et al.	06/1995
	5,439,829	Anderson et al.	08/1995
	5,445,008	Wachter et al.	08/1995
	5,445,970	Rohr	08/1995
	5,445,971	Rohr	08/1995
	5,468,606	Bogart et al.	11/1995
	5,477,716	Snow	12/1995
	5,482,678	Sittler	01/1996
	5,494,639	Grzegorzewski	02/1996

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## U.S. PATENT DOCUMENTS

5,494,829	Sandstrom et al.	02/1996
5,501,986	Ward et al.	03/1996
5,510,481	Bednarski et al.	04/1996
5,525,466	Slovacek et al.	06/1996
5,563,341	Fenner et al.	10/1996
5,595,908	Fawcett et al.	01/1997
5,631,171	Sandstrom et al.	05/1997
5,639,671	Bogart et al.	06/1997
Re 35,544	Snow	07/1997
5,650,123	Saini et al.	07/1997
5,658,732	Ebersole et al.	08/1997
5,705,399	Larue	01/1998
5,719,324	Thundat et al.	02/1998
5,728,584	Sausa et al.	03/1998
5,750,410	Dou et al.	05/1998
5,753,518	Karlsson	05/1998
5,763,191	Knoll et al.	06/1998
5,763,768	Henderson et al.	06/1998
5,770,389	Ching et al.	06/1998
5,770,459	Massey et al.	06/1998
5,786,621	Saif et al.	07/1998
5,807,758	Lee et al.	09/1998
5,819,749	Lee et al.	10/1998
5,827,748	Golden	10/1998
5,830,134	Caputo et al.	11/1998
5,846,708	Hollis et al.	12/1998
5,856,203	Robinson et al.	01/1999
5,862,003	Saif et al.	01/1999
5,888,825	Carr et al.	03/1999
5,908,981	Atalar et al.	06/1999
5,918,263	Thundat	06/1999
5,919,576	Hui et al.	07/1999
5,923,421	Rajic et al.	07/1999
5,923,637	Shimada et al.	07/1999
5,955,377	Maul et al.	09/1999
5,955,659	Gupta et al.	09/1999
5,959,808	Fan et al.	09/1999
5,989,923	Lowe et al.	11/1999
5,995,334	Fan et al.	11/1999
5,998,906	Jerman et al.	12/1999
6,000,280	Miller et al.	12/1999
6,005,400	Thundat et al.	12/1999
6,008,057	Glass et al.	12/1999
6,016,686	Thundat	01/2000
6,022,748	Charych et al.	02/2000
6,029,500	Tom	02/2000

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1641

**U.S. PATENT DOCUMENTS**

6,050,722	Thundat et al.	04/2000
6,060,256	Everhart et al.	05/2000
6,073,484	Miller et al.	06/2000
6,086,821	Lee et al.	07/2000
6,096,559	Thundat et al.	08/2000
6,103,492	Yu	08/2000
6,118,124	Thundat et al.	09/2000
6,167,748	Britton et al.	01/2001
6,203,983	Quate et al.	03/2001
6,212,939	Thundat	04/2001
6,229,609	Muramatsu et al.	05/2001
6,249,001	Sauer et al.	06/2001
6,263,736	Thundat et al.	07/2001
6,289,717	Thundat et al.	09/2001
6,436,647	Quate et al.	08/2002
2002/0092340	Prater et al.	07/2002
2003/0092016	Wiggins et al.	05/2003

**FOREIGN PATENT DOCUMENTS**

Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	Translation Yes	No
	WO 95/02180		PCT	01/1995		

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Albrecht et al., "Microfabrication of Cantilever Styli for the Atomic Force Microscope," <i>J. Vac. Sci Technol</i> 8(4):3386-3396 (Jul/Aug 1990)
	Barnes et al., "Photothermal Spectroscopy with Femtojoule Sensitivity Using a Micromechanical Device," <i>Nature</i> , 372:79-81 (1994)
	Binh et al., "A Mechanical Nanosensor in the Gigahertz Range: Where Mechanics Meets Electronics," <i>Surface Science Letters</i> , 301:L224-L228 (1994)
	Britton, Jr. et al., "MEMS Sensors and Wireless Telemetry for Distributed Systems," Presented at the SPIE 5th International Symposium on Smart Materials and Structures, San Diego, CA, March 2, 1998
	Cleveland et al., "A Nondestructive Method for Determining the Spring Constant of Cantilevers for Scanning Force Microscopy," <i>Rev. Sci. Instrum.</i> , 64(2):403-405 (1993)
	Florin et al., "Adhesion Forces Between Individual Ligand-Receptor Pairs," <i>Science</i> , 264:415-417 (1994)
	Gimzewski et al., "Observation of a Chemical Reaction Using a Micromechanical Sensor," <i>Chemical Physical Letters</i> , 217(5.6):589-594 (1994)
	Hoh et al., "Measuring Intermolecular Binding Forces with the Atomic-force Microscope: The Magnetic Jump Method," Fifty-Second Annual Meeting Microscopy Society of America, New Orleans, LA, July 31-August 5, 1994
	Hoh et al., "Quantized Adhesion Detected with the Atomic Force Microscope," <i>J. Am. Chem. Soc.</i> , 114:4917-4918 (1992)
	Lee et al., "Sensing Discrete Streptavidin-Biotin Interactions with Atomic Force Microscopy," <i>Langmuir</i> , 10:354-357 (1994)
	Norton, "Infrared Image Sensors," <i>Optical Engineering</i> , 30(11):1649-1663 (1991)
	Perazzo et al., "Optimization and Performance of High-Resolution Micro-Optomechanical Thermal Sensors," submitted to Sensors & Actuators June 18, 1996
	Serway, "Physics for Scientists and Engineers," 3rd Edition, Saunders, 1990, Figs. 34A and 38A
	Thundat et al., "Detection of Mercury Vapor Using Resonating Microcantilevers," <i>Appl. Phys. Lett.</i> , 66(13):1695-1697 (1995)
	Thundat et al., "Microcantilever Sensors," <i>Microscale Thermophysical Engineering</i> , 1:185-199 (1997)

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	Serway, Raymond A., "Physics for Scientists & Engineers" Third Edition, Sanders Golden Sunburst Series, pp. 988 & 1073, 1982
	Thundat et al., "Chemical, Physical, and Biological Detection Using Microcantilevers", Microstructure and Microfabricated Systems, pp. 179-187, 1997
	Berger et al., "Surface Stress in the Self-Assembly of Alkanethiols on Gold", Submitted to Science February 27, 1997
	Manalis, "Two Dimensional Micromechanical Bimorph Arrays for Detection of Thermal Radiation", <i>American Institute of Physics</i> , to appear in <i>Applied Physics Letters</i> , June 1997
	Manalis et al., "Interdigital Cantilevers for Atomic Force Microscopy", <i>American Institute of Physics</i> , <i>Applied Physics Letter</i> 69, (25), December 16, 1996
	Minne et al., "Automated Parallel High-Speed Atomic Force Microscopy", <i>American Institute of Physics</i> , <i>Applied Physics Letter</i> , Volume 72, No. 18, May 4, 1999, pp. 2340-2342
	Lang et al., "Sequential Position Readout from Arrays of Micromechanical Cantilever Sensors", <i>American Institute of Physics</i> , 1998
	Wu et al., "Origin of Nanomechanical Cantilever Motion Generated from Biomolecular Interactions" <i>PNAS</i> , Volume 98, No. 4, February 13, 2001, pp 1560-1564
	Hansen et al., "Cantilever-Based Optical Deflection Assay for Discrimination of DNA Single-Nucleotide Mismatches", <i>Analytical Chemistry</i> , Volume 73, No. 7, April 1, 2001, pp. 1567-1571
	Shi et al., "Design and Batch Fabrication of Probes for Sub-100 nm Scanning Thermal Microscopy", <i>Journal of Microelectromechanical Systems</i> , Volume 11, No. 3, September 2001, pp. 370-378
	Zhao, et al., "Optomechanical Uncooled Infrared Imaging System: Design, Microfabrication, and Performance", <i>Journal of Microelectromechanical Systems</i> , Volume 11, No. 2, April 2002
	Wu et al., "Origin of Nanomechanical Cantilever Motion Generated from Biomolecular Interactions", <i>PNAS</i> , Volume 98, No. 4, February 13, 2001
	Baselt et al., "A High-Sensitivity Micromachined Biosensor", <i>Proceedings of the IEEE</i> , Volume 85, No. 4, April 1997
	Lai et al., "Photothermal Measurements at Sub-10 picoWatt Resolution Using Uncooled Micro-optomechanical Sensors", submitted to <i>Applied Physics Letters</i> , June 19, 1996
	Wu et al., "Bioassay of prostate-specific antigen (PSA) using microcantilevers," Research Article, Volume 19, September 2001, pages 856-860

Examiner Signature	<i>[Signature]</i>	Date Considered	7/20/2004
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